

Supplemental Material

Table S1. Search Strategy

MEDLINE

- 1) exp atrial fibrillation/
- 2) (atrial adj4 fibrillat*).mp.
- 3) (auricular adj4 fibrillat*).mp.
- 4) (supraventricular adj4 fibrillat*).mp.
- 5) supraventricular tachycardia/ or tachycardia, ectopic atrial/
- 6) (supraventricular adj4 tachycardia).mp.
- 7) 1 or 2 or 3 or 4 or 5 or 6
- 8) exp cardiac surgical procedures/
- 9) (cardiac adj4 surg*).mp.
- 10) (heart adj4 surg*).mp.
- 11) (coronary adj4 surg*).mp.
- 12) (coronary adj4 bypass).mp.
- 13) CABG.mp.
- 14) (valve adj4 surg*).mp.
- 15) (valve adj4 replace*).mp.
- 16) 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15
- 17) cerebrovascular disease/ or cerebral artery disease/ or cerebrovascular accident/ or stroke/ or vertebrobasilar insufficiency/ or carotid artery disease/ or exp carotid artery obstruction/ or exp brain infarction/ or exp brain ischemia/ or exp occlusive cerebrovascular disease/ or stroke patient/
- 18) (isch?emi* adj6 (stroke* or apoplex* or cerebral vasc* or cerebrovasc* or attack*)).mp.
- 19) CVA.mp.
- 20) ((brain or cerebr* or cerebell* or vertebrobasil* or hemispher* or intracran* or intracerebral or infratentorial or supratentorial or middle cerebr* or mca* or anterior circulation or basilar artery or vertebral artery) adj5 (isch?emi* or infarct* or thrombo* or emboli* or occlus* or hypoxi*)).mp.
- 21) 17 or 18 or 19 or 20
- 22) 7 and 16 and 21

EMBASE

- 1) exp atrial fibrillation/
- 2) (atrial adj4 fibrillat*).mp.
- 3) (auricular adj4 fibrillat*).mp.
- 4) (supraventricular adj4 fibrillat*).mp.

- 5) supraventricular tachycardia/ or ectopic atrial tachycardia/
 6) (supraventricular adj4 tachycardia).mp.
 7) 1 or 2 or 3 or 4 or 5 or 6
 8) exp heart surgery/
 9) (cardiac adj4 surg*).mp.
 10) (heart adj4 surg*).mp.
 11) (coronary adj4 surg*).mp.
 12) (coronary adj4 bypass).mp.
 13) CABG.mp.
 14) (valve adj4 surg*).mp.
 15) (valve adj4 replace*).mp.
 16) 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15
 17) cerebrovascular disease/ or cerebral artery disease/ or cerebrovascular accident/ or stroke/ or vertebralbasilar insufficiency/ or carotid artery disease/ or exp carotid artery obstruction/ or exp brain infarction/ or exp brain ischemia/ or exp occlusive cerebrovascular disease/ or stroke patient/
 18) (isch?emi* adj6 (stroke* or apoplex* or cerebral vasc* or cerebrovasc* or attack*)).mp.
 19) CVA.mp.
 20) ((brain or cerebr* or cerebell* or vertebrobasil* or hemispher* or intracran* or intracerebral or infratentorial or supratentorial or middle cerebr* or mca* or anterior circulation or basilar artery or vertebral artery) adj5 (isch?emi* or infarct* or thrombo* or emboli* or occlus* or hypoxi*)).mp.
 21) 17 or 18 or 19 or 20
 22) 7 and 16 and 21

CENTRAL

- 1) [mh "Atrial Fibrillation"]
- 2) atrial NEAR/4 fibrillat*
- 3) auricular NEAR/4 fibrillat*
- 4) supraventricular NEAR/4 fibrillat*
- 5) [mh ^"Tachycardia, Supraventricular"] or [mh ^"Tachycardia, Ectopic Atrial"]
- 6) supraventricular NEAR/4 tachycardia
- 7) #1 OR #2 OR #3 OR #4 OR #5 OR #6
- 8) [mh "Cardiac Surgical Procedures"]
- 9) cardiac NEAR/4 surg*
- 10) heart NEAR/4 surg*
- 11) coronary NEAR/4 surg*

- 12) coronary NEAR/4 bypass
- 13) CABG
- 14) valve NEAR/4 surg*
- 15) valve NEAR/4 replace*
- 16) #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15
- 17) [mh ^"cerebrovascular disease"] or [mh ^"cerebral artery disease"] or [mh ^"cerebrovascular accident"] or [mh stroke] or [mh ^"vertebrobasilar insufficiency"] or [mh ^"carotid artery disease"] or [mh "carotid artery obstruction"] or [mh "brain infarction"] or [mh "brain ischemia"] or [mh "occlusive cerebrovascular disease"] or [mh ^"stroke patient"]
- 18) (isch*mi* near/6 (stroke* or apoplex* or cerebral vasc* or cerebrovasc* or attack*))
- 19) CVA
- 20) ((brain or cerebr* or cerebell* or vertebrobasil* or hemispher* or intracran* or intracerebral or infratentorial or supratentorial or middle cerebr* or mca* or anterior circulation or basilar artery or vertebral artery) NEAR/5 (isch*mi* or infarct* or thrombo* or emboli* or occlus* or hypoxi*))
- 21) #17 or #18 or #19 or #20
- 22) #7 AND #16 AND #21

Table S2. Study Characteristics

Author	Study period	Institution	Country	Study type	Follow-up (years)	Sample size	# with NOAF	Inc. criteria	Exc. criteria	Exposure	Outcomes
Ahlsson (2010) ¹	1999-2000	Örebro University Hospital	Sweden	Prospective cohort	6	571	165	Underwent primary CABG. Survived day 5 postop	History of AF, PPM	ECG-verified AF episode lasting 1+ minutes during the first 7 postoperative days	LOS, in-hospital stroke, 30-day mortality, late development of AF, cause of death, hospitalisations for arrhythmia related events e.g. stroke)
Biancari (2013) ²	1990-2006	Oulu University Hospital	Finland	Retrospective cohort	7.2	1226	384	Undergoing primary CABG, residents of Oulu	Preoperative AF	Postoperative AF	30-day and late stroke with CHADS2 and CHA2DS2-VASc stratification. Stroke was defined as new neurologic deficit after surgery lasting > 24 hours with or without new structural changes detected after computed tomographic or magnetic resonance imaging +/-

											neurologist review
Elahi (2003)³	1999-2000	Glenfield Hospital	United Kingdom	Retrospective cohort	1	877	136	Undergoing CABG	Previous heart surgery, associated valvular disease	ECG-verified AF or documented in notes	Stroke, development or persistence of AF over follow-up, preoperative influencing variables
Gialdini (2014)⁴	2007-2010	Multicentre Californian nonfederal health care facilities	USA	Retrospective cohort	2.1	73543	11837	Adults that underwent surgery	Percutaneous cardiac procedures, pregnancy related procedures, previous AF diagnosis, cerebrovascular disease	Perioperative AF (ICD-9-CM 427.3x)	Ischaemic stroke (433.x1, 434.x1, 436) without rehab, SAH, ICH or trauma
Horwich (2013)⁵	1995-2009	Queen Elizabeth II Health Sciences Centre	Canada	Retrospective cohort	5.7	8058	2214	Undergoing first time isolated CABG, residents of Nova Scotia, eligible for health insurance coverage	Previous AF	Any episode of AF occurring after CABG that required intervention	New stroke or death by ICD-9 and ICD-10 codes
Konstantino (2016)⁶	2002-2003	Soroka Univeristy Medical Centre	Israel	Prospective cohort	8.5	136	37	Isolated CABG surgery	Prior history, lost to follow-up	Postoperative AF (ICD-9 427.3)	Predictors of long-term AF, correlation between POAF and long-term AF. Stroke, death.

Loubani (2000)⁷	Unclear. Published 2000	Glenfield Hospital	United Kingdom	Retrospective cohort	0.5	375	94	Undergoing elective CABG	Emergency, concomitant surgical procedure, preoperative supraventricular arrhythmia	ECG-verified AF	Influences on development of SVA, clinical consequence and recurrence
Min (2016)⁸	2010-2012	Samsung Medical Centre	Korea	Retrospective cohort	1	192	106	Undergoing off-pump CABG	Required conversion to cardiopulmonary bypass (subgroup analysis excluded preop AF)	New arrhythmia requiring treatment	In-hospital major adverse events and one-year major adverse cardiovascular and cerebral events. Stroke defined as new ischaemic or haemorrhagic event CVA with neurological deficit >24hr
Park (2014)⁹	2010-2012	Samsung Medical Centre	Korea	Prospective cohort	1	113	39	Undergoing elective CABG	Emergency surgery, pre-existing AF, pacemaker, enrolled into other studies, MAZE procedure	Postoperative AF > 5 mins or requiring cardioversion	AF recurrence, stroke (new focal neurological deficit lasting > 24 hours with CT/MRI confirmation)
Philip (2014)¹⁰	1993-2005	Cleveland Clinic	USA	Retrospective cohort	1	5205	1490	Undergoing first-time isolated CABG, > 18	Preoperative AF, bleeding diathesis, hypercoagulable state chronic anticoagulation with warfarin, combined valve or MAZE procedure, prior open heart surgery, preop echo	ECG/telemetry verified AF or flutter	Death, MI, stroke (new, acute focal neurological deficit due to ischaemia or haemorrhage and supported by neuroimaging)

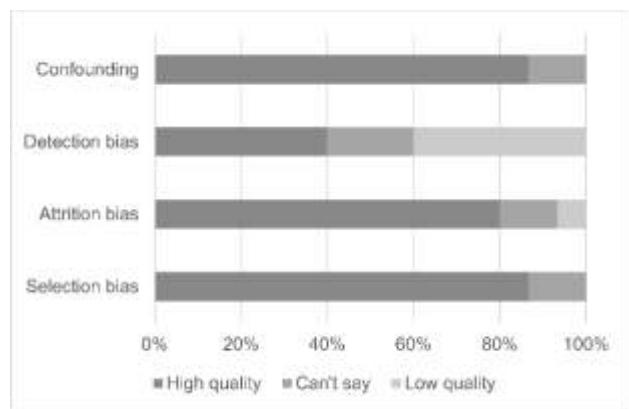
									compatible with valve disease		
Pohjantahti-Maaroos (2013)¹¹	2004-2008	Kuopio University Hospital	Finland	Retrospective cohort	5.6	519	177	Undergoing cardiac surgery	Prior AF	Postoperative AF	Death, stroke, MI, late AF
Rostagno (2014)¹²	2009	AOU Careggi Hospital	Italy	Prospective cohort	2	229	56	Undergoing isolated CABG, in sinus rhythm on admission	Atrial fibrillation, hyperthyroidism, MAZE, more than mild valvular disease, creatinine clearance< 30mL/min	Symptomatic arrhythmic episodes or asymptomatic episodes > 15mins on ECG	Recurrence of AF, stroke, mortality, role of on/off-pump CABG on POAF development
Rostagno (2011)¹³	2007	AOU Careggi Hospital	Italy	Prospective cohort	1.4	229	52	Undergoing isolated CABG, in sinus rhythm on admission	Unclear	Postoperative AF	Recurrence of AF, stroke, mortality, role of on/off-pump CABG on POAF development
Rubin (1987)¹⁴	Unclear. Published 1987	Westchester County Medical Centre	USA	RCT	2.2	123	36	Undergoing CABG	Prior AF, lung disease with bronchospasm, brittle diabetes, previous severe bradycardia, high degree AV block, known digoxin/propranolol sensitivity, EF < 0.5, intraoperative stroke/MI/death	ECG-verified AF > 30 seconds	Stroke, arrhythmia recurrence, angina (questionnaire follow-up)
Tulla (2014)¹⁵	2000-2010	Kuopio University Hospital	Finland	Retrospective cohort	8.5	138	138	Undergoing isolated CABG, in AF at time of discharge	Prior AF	ECG-verified AF > 5mins	Recurrence of AF, stroke, mortality, MI, other cardiac disorders

Whitlock (2014)¹⁶	1996- 2007	Multicentre study in Ontario province	Canada	Retrospective cohort	2	108711	18046	Undergoing CABG or CABG + valve, > 18	Prior AF	Index admission coded for atrial fibrillation	Stroke (ICD-9 and ICD-10), death, combined stroke and death
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Figure S1. Bias analysis (cohort studies)

	Selection bias	Attrition bias	Detection bias	Confounding
Ahlsson 2010 ¹	+	+	-	+
Biancari 2013 ²	+	+	+	+
Elahi 2003 ³	+	+	?	+
Gialdini 2014 ⁴	+	+	+	+
Horwich 2013 ⁵	+	+	+	+
Konstantino 2016 ⁶	+	-	-	+
Loubani 2000 ⁷	+	+	-	+
Min 2016 ⁸	+	+	+	+
Park 2014 ⁹	+	+	-	+
Philip 2014 ¹⁰	+	+	+	+
Pohjantahti 2013 ¹¹	?	?	?	?
Rostagno 2014 ¹²	+	+	-	+
Rostagno 2011 ¹³	?	?	?	?
Tulla 2014 ¹⁴	+	+	-	+
Whitlock 2014 ¹⁵	+	+	+	+

Figure S2. Overall risk of bias (cohort studies).



Supplemental References:

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